THE VETERINARY RECORD

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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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EDITORIAL NOTES.

The approaching election of Members of Council does not seem to evoke any great enthusiasm this year. Possibly it is thought no great question is before the profession and that it matters little who are elected.

It may be worth while to remind the profession that the election is for four years, and that in that time questions of importance may come before the governing body. The members now elected may have—must have—some effect upon the action then taken, and yet who knows what are the views and opinions of the nine or ten men nominated for election.

We do not vote for members of Parliament, for County Councils, or even for Vestries without some idea of the opinions of the men soliciting our suffrage. Why should we vote for men who offer to guide the destiny of our profession, on different principles? Why should we accept them as trustworthy without knowing anything of the reasons which should guide their action? Last year many candidates condescended to issue an address: only one declined to do so, and he was elected. This gentleman's success seems to have suggested that there is no necessity to take the practitioner into your confidence when appealing for his vote. Simply appeal to him as a superior person, gifted by nature to assist in running the machine, and you an accepted at your own valuation. Fortunate is the candidate of whom nothing is required, but unfortunate is the profession which is wrapped in apathy and indifference.

The list of Nominations for Council has now increased to nine, and may be further extended before Monday next. The following are the candidates for the six vacancies:—

1. Barford, J. D.
2. Banham, G. A.
3. Fitzwygram, Sir F.
4. Hunting, W.
5. Penberthy, J.
6. Perrins, H. R.
7. Simpson, Sir H.
8. Trigger, R. C.
9. Walters, W. B.

The slight alteration suggested by the Council in the Farriers' Scheme has been accepted both by the Worshipful Company of Farriers and by the Royal Agricultural Society, so that we may now look forward with confidence to the practical adoption of an attempt to improve the art of horse-shoeing. The Farriers' Company is unfortunately not one of the City Guilds whose wealth is great. Money will be required to give the scheme a fair start, and it is hoped that the horse-owning public will recognise their own interests by freely subscribing. Our profession ought not to be behind, and the various veterinary medical societies, which have so often behaved liberally to objects deserving support, may well consider the claims of horse-shoeing.

At a meeting of Council held on Thursday last, Mr. Cox brought forward a motion suggesting that more notice should be taken of Clause VI of the Veterinary Surgeons' Act which provides for the removal from the Register of the name of any person guilty "of any conduct disgraceful to him in a professional respect" This clause has never yet been acted on, but its existence proves that the legislature recognised professional offences other than those punishable in a Court of law. All other professions recognise such offences, and the medical authorities not unfrequently punish offenders.

In the struggle for existence, which is daily becoming keener in our profession, it is inevitable that some men will adopt methods which cannot be approved by the majority. "We must all live" is an argument applicable to the rudest state of nature. It is only accepted in civilized society with a qualification. We must all live—but live *decently*. In a profession we require more than this—we must live *professionally*. Here comes the difficulty. Who is to decide what "*professional* conduct" is? We all acknowledge (in others) unprofessional conduct, but probably no two men would agree on any half dozen instances of "conduct disgraceful in a professional respect." The task of indicting a fellow practitioner and bringing him before the Council is too invidious for any individual to adopt. If we wait for test cases the clause will long remain a dead letter but the offences will continue and increase until they become simply unbearable. Then a victim will be sacrificed—a victim probably whose chief fault is that he is less artful than his neighbours. The Council should act upon Mr. Cox's suggestion and seriously consider the subject. They might roughly define what are "professional offences", and then the fear of the law would deter men from actions which are now undoubtedly injurious to their neighbours and to the profession.

CASES AND ARTICLES.

TWIST OF THE GREAT COLON.

By F. D. McLaren, M.R.C.V.S., Sheffield.

As you appear to be rather short of cases for your clinical column just at present, I think I may venture to relate a case, which, although probably of frequent occurrence, not particularly remarkable, and ending fatally, may yet prove interesting to some of your younger readers.

The subject was a large cart gelding that was first noticed to be unwell on Thursday morning. The owners however, sent him to work as usual, which he seemed to carry out with difficulty, now and again crouching in the shafts. He was taken home and I was sent for.

I found him standing with his head in a corner, eyes staring, the temperature normal, but the pulse had the wiry feel characteristic of severe abdominal affections, and numbered 90 per minute. The ears and extremities were cold, however, the symptom that attracted my notice the most was this 'crouching' of the loins. Thinking something might be wrong with the urinary system, I passed the catheter, but only a very small quantity of urine passed, which was, however, of normal colour. After this I examined per rectum and found the vessels of the great colon engorged, and its surface extremely tender to the touch. I then came to the conclusion that the latter was twisted, but I was unable to return it to its proper position.

The pulse increased in frequency to 130 per minute, finally becoming imperceptible. The temperature rose to 103. Death supervened 30 hours after the commencement, during the whole of which period the animal remained fixedly standing.

Post mortem examination shewed a twist about 1½ feet from the pelvic flexure of the large colon.

I think the above case forcibly shews the value of exploring per rectum in similar cases.

I may mention that I am in the habit of giving Morphia in the form of suppositories in combination with Glycerine, in painful bowel affections and can endorse all that Mr. Somers says in their favor, as they seem to have a magical effect both in allaying the pain and in removing flatulence when present. I generally give 3 grs. of Morphia in this form to a cart horse and 1½ grs. to lighter bred horses.

ACTINOMYCOSIS.

By Thos. B. Goodall, M.R.C.V.S., Christchurch, Hants.

I place on record the following facts gleaned from *post-mortem* examination of a case of actinomycosis, with the hope that a clue may be given to those investigators who are studying the character of the fungus, and its mode of ingress to the animal economy.

Those who have followed the reports in our veterinary periodicals and who have read Dr. Fleming's work on this disease will note that in this solitary case I have noticed a lesion which, if always present, has heretofore been overlooked by investigators, and if not always present, was certainly a most noticeable feature in this case—not that I desire in the least to minimise the valuable work these gentlemen have done, for if it were not for their having pointed out the nature of the disease under consideration, I should probably not have looked for the fungus in this case, but should have passed it over, as I have done before, in a case to which I shall presently allude, as one of "osteo sarcoma."

I never saw the animal alive to which these notes apply. The bone was given to me by a most respectable butcher the day after the animal was slaughtered. The steer had been purchased *fat* at Wimborne Market, and had been grazed in the Blackmore Vale; no other animal with which it had been in contact, had, so far as my informant knew, been affected.

The part affected was the inferior maxillary bone which presented all the characteristic lesions of the affection, which have been so fully described elsewhere that I need scarcely mention them here—because my object in this paper is not to traverse already explored ground, but to draw attention to a new feature.

In addition, then, to the swelling, cavities in the bone, and the yellow colonies, etc.—the periosteum was infested by a *black* fungus over almost the entire surface of the bone, which black fungus extended into the interior of the bone by the periosteum through the natural foramina, and into the innumerable smaller abnormal ones; it was also in the intermuscular tissues, and in the *centres* of scores of the colonies of the actinomyces.

The spores of the fungus were distinguishable in myriads as small black cells, with the ¼-inch objective.

The periosteum was easily detached and I took several scrapings of the fungus from the periosteum in the endeavour to ascertain its character, and in one of these in the attached or bone surface of the periosteum from a part remote from the visible actinomyces, I found a distinct and perfect cluster of the actinomyces; this seems to point to a probable relationship of the *black* spores with the characteristic "*Ray fungus.*"

After maceration, I found the bone on its inferior free border had been deprived of its earthy constituents, it had retained its shape, but was as though it had been acted upon by an acid.

Between the fourth and fifth molars was a piece of a twig (apparently heather) which had become imbedded into the buccal membrane; this twig corresponded with the width of the molars, one end of it being towards the cheek, the other towards the tongue. I regret very much that this was destroyed with other superfluous parts that had been removed in cleaning the specimen before I noticed the small black spores on the periosteum, because the twig itself was coated by a black substance, and I am strongly of opinion was the vehicle by which

the fungus was introduced into the economy of the steer.

The external plate of the bone, broken up into fragments by the action of the fungus, peeled off in a mass, and presented the appearance on its inner surface, of being studded with numerous round, yellow, shot-like bodies, which were true actinomyces, but *each* of these had a *black* spot in its centre.

Though the bone is riddled and mis-shapen to an enormous degree, and the larger colonies were on the point of "breaking," neither the skin nor buccal membrane were actually destroyed in any part. There was a softening of the skin as though an abscess was "pointing," and in four places, in the vicinity of the fourth molar, there were circular spots where the colonies were destroying the buccal membrane from its *attached* surface, but it was not really broken. I mention this as proof that the fungus thrived and propagated in the substance of the bone, and that its only point of ingress must have been the spot where the heather twig was imbedded. The disease apparently commenced in the alveolus of the fourth molar, the tooth was misplaced, and there are large cavities in the bone on the immediate outer surface of this tooth.

Bearing in mind that the twig of heather was imbedded at this spot, is there not sufficient evidence to lead us to assume that the fungus of actinomycosis is one that thrives on a vegetable host, and that its introduction into the animal body is accidental?

The experiments of Johne and Ponfick are quoted by Dr. Fleming as proof that this should be looked upon as an infectious disease, because these gentlemen have succeeded (after previous failures) in cultivating a growth of the fungus in a healthy bovine, by, if we may say so, sowing the spores on a soil in which the organisms have been known to grow, viz., the animal body. Ponfick is reported to have not succeeded in producing the disease in cattle by *feeding* them with infective material from fresh nodules. There is no record of any instances which might tend to show that the disease might be accidentally transmitted. These experiments side by side with those of Kaufman with the aspergillus glaucus, appear to prove that this disease is not so readily introduced into the system as is the disease produced by the ingestion of moulds; that the spores of the actinomyces must be inserted *mechanically* into the organism of an animal to induce the condition we term disease. They do not prove that actinomycosis should be classified as an infectious disease any more than "mould poisoning," but that the actinomyces are powerless to infect an animal organism without mechanical introduction, *i.e.*, without an abrasion of the skin or mucous membrane, seems to be proved by the negative results of Ponfick's feeding experiment. (Vide Fleming's work on Actinomycosis.)

That the disease is non-contagious as from animal to animal, I had a few years ago a case under observation that seems to offer convincing proof when I, with others, spoke of the disease as osteo-sarcoma.

A client had a three-year-old cow that first had the characteristic small swelling on the jaw, gradually increasing in size, until after the lapse of a year, she was a most pitiable object, abscesses "breaking" and discharging literally all over the side of the face, in the submaxillary space. The gentleman to whom this cow belonged was in some ways peculiar, and he had a great objection to an animal being destroyed, hence she was] allowed to linger on, but though in frequent contact with other animals no others were affected as some of them certainly would have been were the disease transmissible by contagion. I am certain this was a genuine case of actinomycosis, and I still have the bone in my possession.

DR. CLARKE'S OPERATION FOR ROARING.

By Jno. A. W. Dollar.

When addressing a meeting of the Central Veterinary Medical Society, on the 3rd inst., I alluded to Dr. Clark's researches in connection with roaring, and stated that in consequence of that gentleman's continued indisposition, he had hitherto been unable to publish a full account of his work or its results. Feeling that the veterinary profession was interested in these experiments, I begged leave to reveal to my brother practitioners, such details as were in my power. That permission has been most liberally and kindly accorded, and I can therefore place before my *confrères* a fairly accurate statement of the method Dr. Clarke now employs.

At the meeting referred to, I set forth the hypotheses on which these experiments were based, and I need only add here that the object of the below described operation is to fix the arytœnoid in a position of abduction, after which the entire larynx may be dilated and the air passage increased, or not, as may be considered advisable.

There are many methods of bringing about the desired adhesions between the arytænoid and thyroid.

I.—By ligature. The larynx is opened in the middle line through the crico-thyroid ligament. A strong rectangular needle, with a notch instead of an eye is passed from without inwards through the arytænoid cartilage, a loop of plaited horsehair is hooked over the notch from inside and withdrawn—the loop is divided outside, leaving the arytænoid transfixed by two ligatures—the needle is again introduced through the thyroid, half an inch in front of the processus vocalis of the arytænoid and one of the ligatures is caught and withdrawn, the two ends of this ligature (lig. I.) are tied outside. The needle is again introduced below the arytænoid and the end of ligature II. brought out and tied. In a similar way a ligature is passed round the vocal cord, fixing it to the thyroid.

There are certain points connected with this operation not essential but probably advantageous. They are:—

a.—Preliminary ligature of laryngeal branch of thyroid artery, a ligature is passed round it with an aneurism needle at the lower border of the thyroid cartilage half an inch behind the tendon of the sterno-thyroid muscle.

b.—Eversion or excision of the sacculus laryngis. Generally the sacculus can be easily everted with a pair of forceps or a little wire brush; when it is adherent, its surface may be touched with a hot wire (galvano-cautery) or any caustic.

c.—Excision of cartilage of Santorini; this gives more room, and the cicatrix seems rather advantageous in consolidating adhesions.

d.—Division of arytænoïdeus muscle and ligament. This gives the arytænoid rest and favours rapid adhesion.

Healing after this operation will usually be complete in from two to three weeks. It is convenient to have a tracheal tube inserted so as to observe the condition, and at the end of three weeks the *pomum-adami* can be divided and the crutch inserted. This will heal up in a week, so that the whole operation can be effected in a month. It is very simple, unattended with complication and devoid of any risk of the horse being made worse than he was before.

II.—Another mode of performing this operation, adopted with the idea of further simplifying it, is as follows. A pair of powerful forceps are made with parallel working blades, which are brought together or separated by a screw. The forceps have flattened ends like a pair of tongs and these are perforated so that a fine steel cannula, which is fitted with sharp and blunt probes, when passed through the outer blade is guided to the orifice in the inner one. The larynx of the horse having been opened in the middle line as usual, the inner blade of the forceps is applied to the middle of the flat surface of the arytænoid; the outer blade to the skin behind the jaw close to the tendon of the sterno-maxillaris. After puncturing the skin with the sharp probe the blunt probe can be worked through the tissues till it emerges through the perforated inner blade in the larynx. The cannula follows it and the forceps can be withdrawn leaving the cannula leading from the skin to the interior of the larynx. A loop of wire is introduced through the cannula from outside, and is withdrawn bringing with it a strong platinum wire with a platinum plated or silver disk about as big as a shilling at the end of it; this is drawn up against the surface of the arytænoid cartilage and the cannula being now withdrawn the outer end of the platinum wire is fastened to a spring disk and drawn to a moderate tension, which, however, is prevented from being excessive by the spring. The arytænoid and thyroid are now held firmly together by an inner disk resting against the face of the arytænoid and an outer disk resting on the skin of the neck—the two united by a strong wire. A wire also passes from the inner disk through the tracheal tube, so that after a few days the outer wire can be undone and the inner disk withdrawn through the tube. A wire is also carried through the aryteno-epiglottic fold, the inner end is attached to a small platinum disk or wheel about ¼-inch in diameter—the other end to a button outside—the small disk is allowed to remain in, or slowly cut its way outwards to the skin, no great pressure being put upon it. It causes no irritation and forms a firm cicatrix which materially assists in securing the desired position. The vocal cord is fixed with a ligature as previously described. The presence of the disk in contact with the arytenoid does not produce any cough or irritation but it requires watching to see that it does not embed itself in the arytænoid, as it may if drawn too tight. For the first few days it can be felt by the finger through the laryngeal wound, and should be withdrawn altogether at the end of a week. The disks outside must be protected by some sort of shield, a hood made of strong perforated leather answers best—if not protected a horse may rub them and do a good deal of mischief. This is the only trouble that has occurred with this method so far, but as it has only been used in a few cases it cannot be said yet whether it is quicker and better than the ligature—either mode is simple and requires very little skill.

"LOOK ON THIS PICTURE AND ON THAT."

By P. M. Walker, M.R.C.V.S., Halifax.

In *The Record* of March 29th, Mr. Greaves has an article headed as above, in which he appeals to the members of our profession to become Members of the Mutual Veterinary Defence Association. From your article in the same issue I also see that you, like many more, are at a loss to understand the rules and methods of the Association. The facts I am about to relate justify not only existing, but intending members in demanding, before subscribing, some information as to the benefits to be derived from membership.

Some ten or twelve years since, my brother (now deceased) then in practice in Bradford, had a claim made against him very similar to those referred to by your correspondent. Being a member of the Defence Association he reported to that body the whole circumstances of the case, and in reply was advised to apologise and settle the matter quietly, which he indignantly refused to do, and determined to defend himself at any cost, with the result, that the claim was withdrawn. The question arises—Who showed the bold front in that case? Certainly not the Defence Association.

I now come to a case of recent date, in which I was personally concerned, and which I will particularise as briefly as possible to enable you and your readers to judge whether our Association showed much "sagacity and firmness." On the 15th January last, I was called in to examine a mare. I was told that the owner had stopped her and sent her to the forge thinking she had been pricked. On examination, I found her lameness caused by the disease known as "frost-bite" or "carbunculosis" which had found its nidus in the sole. After ten days treatment I ordered a bar shoe and to try her with a little work. The shoe not fitting well she fell lame again on the return journey, when a brother practitioner who chanced to be in the neighbourhood, rushed off to the inspector of

the S.P.C.A. and reported the case. The mare was stopped by the inspector, when I went to the forge myself and fashioned and fitted a proper bar-shoe, since which she has never missed a day's work, and there has been no return of the lameness. On finding he had made a mistake, my professional brother objected to give voluntary evidence and had, in consequence, to be summoned as a witness. The inspector saw me twice concerning the case, which I fully explained, and in reply to his question as to the fitness of the mare to work, I answered "Not with that shoe on." He said he must summon the owner and the driver, to which I replied that they were not at all to blame as I had ordered the mare to have a trial journey. I also admitted that she had fallen lame again and explained the cause, and assured him that with a proper fitting bar-shoe she would be all right. Notwithstanding all my explanations and assurances, this individual (who had just recently been appointed) acting, I presume, on the principle that "New brooms sweep clean" applied for a summons against the owner, the driver, and myself, charging us conjointly with cruelty, &c., &c., and thereby debarring me from giving evidence on my own or my client's behalf. Considering this an attack upon the profession which, if a conviction followed, might set up a precedent which in future would result in serious annoyance and expense to the profession generally, I asked two friends of long practical experience, to examine the animal and corroborate my statement. I also engaged a solicitor to defend me, and wrote to the Defence Association thinking they might watch the case on behalf of the members of the Association. Although I had not asked them to defend me, the reply I received was that in defending me they would be defending one who was not a member of the Association. Having been a member for about sixteen years that remark could not apply to me, but it proved clearly that because I happened (not by choice, as I protested against the conjoint summons) to be in a boat with two non-professional men I must be allowed to sink or swim as best I could. Again I ask, who showed the "bold front" or the "sagacity and firmness" in this case? For some reason best known to himself the Inspector, when the case came on for trial, applied for an adjournment for a week, which was granted, thereby involving not only a loss of valuable time but also great expense. When at length the trial came off the magistrates dismissed the case, the majority being of opinion that it was an unwarrantable prosecution.

Now, sir, I should like to know who is to say whether a horse is fit for work—the Veterinary Surgeon or the Inspectors of the S.P.C.A. That Society is a most useful institution supported by the public in the interests of dumb animals, but I am afraid such frivolous, vexatious prosecutions as the foregoing will not tend to promote its success.

I trust that those who have the conduct of our Defence Association may see the error of their ways and let the members know exactly what they may expect in return for their subscriptions.

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VETERINARY MEDICAL SOCIETIES.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

The following paper was read at a meeting of this Association on February 28th.

SUGGESTED AMENDMENTS OF THE CONTAGIOUS DISEASES (ANIMALS) ACT.

By W. Hunting, F.R.C.V.S., London.

As far back as 1746, an Act of Parliament dealing with a contagious (animal) disease was passed in this country. It applied to only one disease—cattle plague—and was in force for eleven years. This Act empowered the Privy Council to issue orders for regulating the movement of animals and for the slaughter of diseased ones.

In 1848, owing to the prevalence of sheep pox, an Act was passed "to prevent the spreading of Contagious or Infectious Diseases among Sheep, Cattle, and other Animals." This Act was continued by several subsequent Acts, and fortunately was in force when, in 1865, the cattle plague reached this country. The powers given by it to the Privy Council enabled the regulations to be made which ultimately stamped out that disease.

In 1869 our first systematic Contagious Diseases (Animals) Act was produced. It was based upon the experience derived from previous laws, emphasised by the frightful losses caused by the then recent cattle plague. It was a great advance on any previous legislation of the kind, and included provisions for cattle plague, pleuro-pneumonia, foot-and-mouth disease, glanders, and sheep-scab.

It provided for a permanent State veterinary staff of professional advisers, and for port inspectors. The Act was a "permissive" one, *i.e.*, it did not compel Local Authorities to enforce regulations—it permitted them. It did not say "shall" but "may." Of course this has led to gross negligence in some districts, but on the whole has worked pretty well. Probably no Act of a compulsory nature could have passed Parliament, and if it had, it would have been opposed on all sides by the "free and independent" (ignorant?).

By 1878 public opinion on the contagious diseases of animals had advanced to such a degree, that the old 1869 Act and all the orders issued under it by the Privy Council were combined in a new Act. Some additional diseases were included in this, and greater powers given to the Central and Local Authorities.

In 1884 two amending Acts were passed which gave (1) power to the Central Authority to regulate or prohibit importation of animals; (2) power to Local Authorities to transfer whole or parts of their districts to neighbouring Authorities.

In 1886 a further amending Act was passed, which increased the powers of the Central Authority and transferred the control of dairies, cow-sheds, and milk shops to the Local Government Board. It also enlarged the meaning of the word "animals" in the Act, so that Orders in Council might be framed to include any four-footed beast.

In 1889 the Local Government Act which constituted County Councils all over the country transferred to them the powers and duties which had hitherto been invested in Corporations or Justices of the Peace. The County Councils are now the Local Authorities under the Contagious Diseases (Animals) Act.

In 1889 the Board of Agriculture was established, and this Body has succeeded the Privy Council as the Central

Authority in carrying out the Act, and for issuing orders under it.

This short outline of the origin and development of the laws provided for stamping out and preventing contagious diseases amongst animals shows how the Act has, step by step, been made more extensive and more restrictive, as our legislators have become convinced of its necessity and its beneficial effects. The diseases for which no provision was made in 1869, but which now are embraced by that of 1878, existed as widely then as now. It is not that a greater prevalence of disease exists, or that the malignancy of any malady has increased. It is simply that the State has recognised the value of prevention, and has accepted the teachings of science as to the nature of these diseases. Since 1878 science has made further advances. Our knowledge of disease and its prevention has progressed. The owners of stock have widely accepted the opinions of our experts, and public feeling is ready for another advance in legislation calculated to stay disease, save animal live, and increase the wealth of the nation.

From the veterinary profession the owners of live stock derive their notions of the nature of animal diseases. Without the co-operation of veterinarian and stock-owner legislative measures do not get a fair trial, and regulations become almost inoperative for good. It is essential, then, that we individually and collectively adopt sound ideas as to disease and its prevention. Not one of us can hope alone to master all the peculiarities surrounding the spread of each contagious disease, yet each one should strive to increase his experience; and how can we do this better than by exchange of ideas at meetings of this kind?

Resident as I am in town, my experience of many diseases is very limited, and you must excuse me if I display some ignorance. I have not come to Newcastle to teach so much as to learn. My great object is to elect a lively exchange of experiences and opinions.

The diseases now legislated for are:—

Cattle Plague.	Glanders and Farcy.
Pleuro pneumonia.	Swine Fever.
Foot and Mouth Disease.	Anthrax.
Sheep-pox.	Rabies.
Sheep-scab.	Sarcoptic Mange (in Shetland).

Now, before we notice the provisions made by the Act for each of these diseases, let us shortly consider what special features they have in common, and what peculiarities some of them present. This, I think, will enable us better to appreciate why in some cases the regulations have been successful, and why in others they have failed. It may also suggest to us that there are some diseases which may well, from their similarity to those included, be provided for by the Act.

All these diseases (unless we except anthrax) present one common feature—they do not rise spontaneously, they are capable of direct or indirect transmission from diseased to healthy animals. They are each dependent for their origin upon a specific virus. If we could completely destroy this virus throughout the whole country, these diseases would cease. We believe that the total destruction of the virus of each disease is possible, because we know of only one condition in which it can retain its vitality for any length of time, *i.e.*, in the body of living animals. In these it cannot exist without producing signs of its presence, and therefore it is capable of being detected and destroyed. Unfortunately the virus of each disease behaves differently in the bodies of affected animals, and also out of them. Outside of the animal bodies some virus dies rapidly, some slowly, and some possesses great vitality. Inside the body we also notice great variety in its behaviour. In one case it rapidly gives rise to disease (swine-fever), in another a long period may elapse between its entrance into the system and any signs of disease (rabies), in some cases it rapidly causes death (cattle plague), in others complete recovery soon follows the disturbance due to its existence (foot and mouth disease), whilst in yet another it may excite no definite symptoms for a long time after it has caused structural changes certain sooner or later to prove fatal (glanders).

Clearly that virus is most easily destroyed which most rapidly gives evidence of its existence, and which most rapidly kills the animal or permits its recovery. In other words, the diseases most amenable to preventive measures are those with short periods of incubation, and those of short duration; whilst those most difficult to deal with are those possessing a long period of incubation or those which assume a latent form, and thus preserve the vitality of the virus in an unsuspected animal.

These remarks only hold good so far as our own island is concerned, and pre-suppose that we shall not import a fresh stock of virus. I believe that our arrangements, so far as the importation of foreign stock is concerned, are sufficient. I think that, practically, our system of port inspection, and the use of the powers possessed by the Central Authority to forbid importation from countries in which diseases are known to prevail, are equal to the task of staying fresh importation.

It is only just possible that a contagious disease may elude these powers, but the possibility is so insignificant that we have no right to ask for more stringent measures, which would entail disorganisation of the trade in food—a trade necessary to the existence of our population.

I have much greater doubts about the trade with Ireland, and so long as that country suffers from any disease scheduled by the Contagious Diseases (Animals) Act, I think it should be treated, not as a foreign country, but in the same way as we treat an infected county.

Let us consider the various diseases already provided for by the Act, and see if we can offer any suggestions for more effectually stamping them out.

Cattle plague, foot and mouth disease, and sheep-pox have completely disappeared, and therefore we may conclude that the regulations as applied to them are quite effective. If the Act had done no more, it would have well proved its value. Those who think regulations on the importation of stock are only protection in disguise, those who call "slaughter" cruel and unscientific, and those who value veterinary science lightly, might with profit work out the sum saved to the nation by the extermination of those three diseases.

Pleuro-pneumonia.

Pleuro-pneumonia is still with us, although some stringent regulations have now been in force for two years. In 1877 5330 cattle were reported as attacked; in 1881 the numbers were reduced to 1875, and by 1883 only 951 were returned as affected. During the following four years the disease increased, till, in 1887, 2437 animals were attacked.

In March 1888 the Pleuro-pneumonia Slaughter Order came into operation. This order made it compulsory on Local Authorities to slaughter within ten days not only all *diseased* animals, but all cattle which have been in contact with the diseased ones.

It was hoped and believed that this measure would have had the effect in a very short time—say two years—of stamping out the disease. It has failed, and the question is, Why?

Pleuro-pneumonia is one of the diseases I just now referred to in which the infective virus may exist in an animal for a long time, as the accompaniment of a latent form of disease. It also presents the difficulty of having a long period of incubation. The detection of diseased animals is therefore often impossible. An ox may be

apparently quite healthy, and yet only in the midst of the incubative stage of disease. It may show no sign of pleuro-pneumonia and yet be dangerously infective, owing to a latent disease of lung retaining the virus in an active form.

Such conditions can only be provided for by maintaining in all infected areas such a period of isolation as shall completely cover the longest possible period of incubation. No period of isolation can practically be fixed which would ensure the detection of all latent cases of disease, and some other method must therefore be adopted to meet them. The only one is to slaughter every animal on an infected place which can possibly have taken into its system the infection. This would be an easy enough matter if the stock-owner would always assist in carrying out the purpose of the Act. If every outbreak of disease were followed by the declaration of such an infected place as included every animal which might have been infected, and all were then slaughtered, no spread of disease could possibly take place. But when animals which have been in contact with diseased ones are, either by accident or design, removed out of a shed, field, or other place before the inspector is sent for, the spread of disease is rendered very probable.

Pleuro-pneumonia, like most other diseases, is not always diagnosed with certainty, consequently delay may take place in detecting and giving notice of its existence. In some cases this delay is pardonable, but it it is always a misfortune. In other cases the delay is wilful, and the owner of stock is then guilty of criminal negligence.

It is easy to kill and bury a diseased animal on a farm, instead of reporting the existence of disease. It is then possible to sell the remainder of the herd which has been in contact with the diseased one. Conviction for such an offence is not easy, but that it is perpetrated is shown by the results of sales. When three or four outbreaks of pleuro-pneumonia can be traced backwards to one lot of cattle brought from one place we may be pretty sure that the seller knew his stock was infected. The statement that the disease remains more obstinately in districts in which members of our profession are openly opposed to the Slaughter Act, is, if true, a sad reflection on the bigotry and want of common sense of some of our members.

The inherent difficulties due to the nature of the disease, the positive opposition to the law of some few veterinarians, the wilful negligence or selfish dishonesty of some owners of stock, and the lukewarmness of Local Authorities, combine to frustrate the success which ought to follow the existing law.

The amendment necessary is simply greater stringency in carrying it out, and this can only be enforced by giving the Central Authority power to act for pleuro-pneumonia as they do for cattle plague.

Should Parliament provide for the payment of compensation out of the Consolidated Fund instead of the local rates, we may confidently expect the Local Authorities to give all the assistance they possibly can.

It is now generally accepted that pleuro-pneumonia does not spread by mediate contagion—in other words, the infection is not carried by persons or things, nor do sheds and buildings retain the virus in an active state. If this be so, a great many worrying and expensive regulations may be allowed to lapse, and attention may be concentrated upon the only source of danger—the living animal. It would be a decided comfort to some poor beasts if the promiscuous and useless practice of distributing poisonous chemicals and caustic lime were replaced by a free use of soap and water.

I have said nothing as to inoculation as a method of prevention, because I do not recognise it as one. Since the Compulsory Slaughter Order came into force there has been in England a steady decline in the prevalence of the disease, whereas in Scotland seven more counties were affected in 1889 than in the previous year, and the number of outbreaks have increased by thirty-one. The only difference between the two countries to account for this, is the prevalence in the north of a belief in inoculation, which leads to negligence, and even to active opposition to or evasion of the Act. Wherever a belief in the virtues of inoculation prevails, there also pleuro-pneumonia flourishes.

Glanders and Farcy.

These diseases have two points of resemblance to pleuro-pneumonia—they are not yielding to the existing law, and they are due to a virus possessing a lengthy period of incubation and giving rise to a latent form of disease.

There is no doubt whatever that these diseases are much less common than they were two generations ago. I do not think that even in recent years they have absolutely increased, although the Government returns might suggest such an explanation.

Year.	*Glanders.*	*Farcy.*	*Total.*
1877	494	264	758
1880	1346	764	2110
1885	538	408	946
1888	920	661	1581
1889	1205	1026	2231

The apparent increase is due to the nearer approximation of the numbers reported to the numbers existing. In the Metropolis we now have nearly all the cases of glanders and farcy reported, partly because the owner and veterinary attendant have acknowledged their legal requirements, and partly because it is very difficult to dispose of a dead horse without notifying an inspector of its existence. In the provinces much greater facilities exist for breaking the law, and quietly disposing of diseased animals without reporting them. If Local Authorities did their duty, if horse-owners refrained from breaking the law, and if veterinary practitioners would advise their clients of the proper procedure, I have no doubt the number or cases returned of glanders and farcy would in many counties at once be doubled. It is certain that the counties of Lancaster, Durham, Warwick, and Stafford do not attempt to enforce the law, and that the horse-owners therein systematically evade it. The gravity of the disease no one disputes; every year it destroys a greater number of horses than would supply all the remounts required by the British army; it is practically incurable, and it is communicable to human beings. That it might be completely stamped out of the kingdom is also beyond dispute.

The existing law is simply absurd—it provides for the destruction of horses suffering from glanders, but permits a man to keep and treat farcy. Now the two pathological conditions are due to the self-same virus, and it is therefore evident that we shall never get rid of glanders unless we also get rid of farcy. Every horse suffering from farcy is a living centre for the development of glanders poison. The same virulent material which in one horse may give rise to farcy may in another originate glanders. Why then treat the manifestations of the virus differently because the symptoms shown by affected animals are in some cases dis-similiar?

The answer is, that when the Act was passed the veterinary profession had not given up the belief in the curability of farcy, and the legislature could not be induced to order the destruction of horses suffering from a curable disease. We now know that 95 per cent. of cases of farcy are incurable; that although the external signs may disappear for a time, the organism causing the disease remains in the lungs, where it continues to increase and develop, until some day—and

that generally not a remote one—the horse breaks out again either with farcy or glanders and dies.

I am not prepared to deny that some small percentage of cases of farcy do permanently recover, and I quite appreciate the argument that if a man owns a horse, worth say £30, suffering from a mild attack of farcy, and if he has convenience for perfect isolation, he should not be compelled to kill that horse for the general good and safety of other people. Compulsory slaughter for farcy should, I think, be accompanied by compensation to the extent of half the value—no horse to be valued at more than £30.

About four-fifths of all the cases of glanders and farcy in the kingdom are seen in the Metropolis, where, from the arrangements of horse-slaughtering establishments and the attention devoted to the disease by the County Council, every facility exists for stamping it out.

The treatment of farcy, which means preserving the virus, and the sale of infected animals, which means distributing the virus, are the two obstacles in the way of effective prevention.

The sale of horses from infected studs for at least three months after the appearance of disease should be forbidden except by licence of the Local Authority. Farcy should be subject to the same regulations as glanders except that it should be compensated for, and the new regulations might be applied to the Metropolis alone for, say, two years.

Anthrax.

Anthrax was made a disease under the Act in 1886 by an Order in Council. It differs from the other diseases in being due to a virus which possesses the power of retaining its vitality outside the animal body for an indefinite time, and it may not only retain vitality under certain circumstances, but seems to possess the power to grow and increase.

Measures of prevention must then be taken not only against infected animals, but also against infected places. The Act provides for prohibition of movement of animals, but cases are not infrequent where compulsory movement would be the fittest preventive. In cases where fields or other places become infected, movement away from the plague spot is necessary.

In anthrax it seems of more importance to devote attention to the dead animal than to living ones. Probably in no other disease is disinfection so important, because the dead body and fluids escaping from it may infect the ground on which they lie, and give rise to disease at an indefinite day.

Although many experiments have been made with the virus of anthrax, I do not think we are yet sufficiently well acquainted with its behaviour under all circumstances to provide with any certainty for its prevention. We know more about its behaviour in the body of an animal than we do of its existence and vitality in soils and other places.

Inoculation has been advised as a protective remedy, and it may be that we have in this procedure a valuable agent, but further experiments are necessary to determine its efficacy. There is no doubt that on pastures where losses have occurred, inoculation has been followed by no return of the disease in the protected stock. But similar non-recurrence of disease has been noticed in a herd which has not been inoculated, but which has remained in a field after some of its members have succumbed to anthrax.

Rabies.

In the Report of the Agricultural Department for 1888, page 153, it is written, "To get rid of rabies in this country it would be necessary to prohibit the importation of dogs from all countries in which the disease exists, and then enforce uniform regulations in every infected district in Great Britain."

This recognition by the department of the requisites for success is in the right direction, but there is a great gulf between acknowledging what is wanted and carrying it out. No regulations in this country can be really successful until a large majority of the people are convinced of their necessity and are willing to adopt them. Regulations to stamp out rabies have raised a great deal of positive opposition—some of it reasonable, some very unreasonable. Our profession ought to have a guiding voice in this matter, but so long as we speak with two voices, we shall not be accepted as trustworthy advisers.

We seem, with a few exceptions, agreed that rabies does not arise except from the bite of a rabid animal, and we believe that the disease would cease if we could destroy all infected animals and prevent them from biting others. What regulations would be most likely to effect this?

We must have notification of every rabid animal as soon as possible. This is now required by law, but is often evaded or neglected. Every practitioner should advise his client to report. Rabid dogs have, unfortunately, an almost irresitible tendency to escape from control and to wander. During this wandering they bite, and thus may unseen inoculate the disease in another dog or animal, which remains unsuspected until it develops the disease, and in turn becomes dangerous and infective. The law attempts to meet this condition in certain districts by requiring all dogs to wear a muzzle when at large, or be seized by the police. The fact of a dog roaming in such districts without his muzzle is proof either of negligence on the part of the owners, or that the dog has escaped from home; he is at once suspected: and the police, if they see him, seize and detain him, or on show of violence, kill him.

So far it seems to me the law is logical and practical, but it is never brought into action until some extent of outbreak is observed. It should be so arranged as to act at once on the appearance of the first case. A case of rabies occurring anywhere, as soon as verified by the Central or the Local Authority should immediately constitute the district for a five mile radius an infected area for thirty days. The muzzling orders should immediately be enforced, and thus any harm that dog had done would in 90 per cent. of cases be provided for. The use of the muzzle has raised great opposition, and it has been suggested that a collar and token would be equally useful as an indicator that the dog was out without leave. It would not, for the simple reason that it would often be left on in the house, and a rabid dog escaping would escape with his protection mark in its place. The muzzle is removed in the house, and if a dog escapes he is without his protection mark or distinctive badge, and so attracts the notice of the police, who arrest him. In some few rare cases the muzzle acts as a direct preventive, when, for instance, an unrecognised rabid dog is taken out or allowed to run out after being muzzled. If a collar and badge were adopted instead of a muzzle, it would be necessary to make the other regulations more stringent, and to permit the police or other people to seize or kill any dog without a collar in an infected district.

I believe that the muzzle is the best indicator for use in any rabies regulations, but I also believe that a collar and token would be nearly as effective. I do not believe that any exemptions should be allowed in an infected district, and would therefore enforce the use of a distinctive collar on all sporting dogs, where a muzzle would destroy their usefulness.

To say that hounds and other sporting dogs are so well looked after that there is practically no danger from them is incorrect. Any middle-aged practitioner

can remember four serious outbreaks in kennels of hounds, and in no case was the disease diagnosed by the kennel men. I regret to say that my experience of kennel men is that they are monumentally ignorant of diseases, and it is too true that many cases of rabies are infective and dangerous for a day or even more before the disease is distinct enough for diagnosis by any one but an expert.

Of course all our regulations can only stamp out the disease in the country if they are perfectly successful. We are quite unprotected against importing a fresh supply of rabies-bearing animals. There is a very large importation of dogs from countries in Europe where rabies always exists, and there is a large passage backwards and forwards of dogs who accompany their owners on temporary visits. I have seen rabies thus brought from France, Germany, and Algiers. We can hardly ask for total prohibition, but we may well demand quarantine or registration, with a monthly report from the owner for three months.

Sheep-Scab.

Concerning this disease I have no suggestions to offer. From the returns of the Board of Agriculture, I gather that, although it exists as widely as ever, yet a much smaller number of sheep are affected. This may, perhaps, indicate that more outbreaks are reported, but I am very doubtful if the returns are to be depended on as correct. The spread of knowledge amongst farmers, the number of undoubtedly reliable dips now obtainable, and a more stringent inspection of markets may probably be trusted to, to eradicate the disease some day.

Swine Fever.

This disease is one of the most infectious in the list of scheduled plagues, and shows very little improvement as the result of restrictions. When slaughter of the diseased animals and those in contact was adopted by Local Authorities, and compensation paid, a marked decline in the disease was noticeable. The cost of the compensation soon put a stop to this method of stamping out, and we must now rely upon isolation and the restriction of movement. To be effective, these measures must be accompanied by the declaration of larger infected areas, and a more lengthened period of isolation. Markets and fairs, too, should receive more careful inspection, and when the disease is prevalent in a county, all movement of swine should be forbidden for a time.

Additions to the Act.

I believe that tuberculosis in cattle, and mange in horses should be included in the list of diseases provided for in the Contagious Diseases (Animals) Act.

Mange in Horses.

As far back as the reign of Henry VIII., it was forbidden to have a mangy horse on a high road or in a public place, and I fail to see why such regulations should not now exist. Quite recently an Order in Council legislated for sarcoptic mange in Shetland. If the order had been in force twelve months earlier, a large number of ponies would probably have been saved to the islanders. If ever we get a bad outbreak on the mainland, the Government will doubtless pass an Order for its suppression—but why wait? Is it not much easier to stamp out a disease in its inception than at its height? The owners of large studs can tell of trouble and expense now from mange gaining a footing in their stables, and if the same regulations were applied to mange in horses as now affect scab in sheep, no reasonable objection could be raised, and much good might be effected.

Tuberculosis.

It is unnecessary to give any reasons why this disease should be scheduled, except to state that the Departmental Committee, which recently made a special enquiry into the subject, strongly recommended it.

An Order for the inclusion of the disease was even prepared, but not passed, as the authorities were frightened by a series of objections submitted to them. That there are difficulties in practically carrying out measures for the extinction of tuberculosis cannot be denied. The two great ones are—the detection of the disease and the payment of compensation. The diagnosis of tuberculosis in any animal is, in the earliest stages, simply impossible, and therefore we need not attempt to legislate for such cases. The disease is not altogether singular in this respect. We legislate for glanders, and yet the earliest stage is very seldom capable of correct diagnosis. Of course, when we get definite external signs we can act, and when we get unmistakeable tuberculosis we could also act. The inspectors under the Act would have a difficult job, and they would naturally not be hasty. We should not propose to treat the disease as we do pleuro-pneumonia. We should not kill every animal suspected, but we might provide for slaughter or isolation on private premises, and we might forbid the exposure of diseased animals in public places. Compensation should not be paid for animals whose flesh was unfit for food, nor for those in which the disease was so evident that the owner would really be kindly treated by being obliged to kill and bury it. The prevalence of the disease and its transmissible nature are arguments enough to warrant the law being applied. The difficulties surrounding the subject are surely to be met by the wisdom and experience of our Board of Agriculture. The very mildest of regulations would do good merely by directing attention to a dangerous disease.

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

The following paper was read at a meeting of this Association held on Friday, March 14th.

IS THE MUZZLING OF DOGS NECESSARY FOR THE SUPPRESSION OR EXTINCTION OF RABIES?

By W. Awde, F.R.C.V.S.

I hope that you will not expect an elaborate paper from me this evening, for I have been called on at short notice to introduce a subject for discussion. In choosing this one I have done so conscious of the amount of attention it has received from the general public, owing to the Muzzling regulations having been in force for some time in many places. I also had an idea that it might raise a good discussion as there seem to be considerable differences of opinion amongst members of our Profession as to what are the best methods to adopt for the extinction of this dreadful disease. It is not my intention to deal with the symptoms of Rabies, for I believe that you are all well acquainted with them. The great importance of this disease arises from the fact that the dog can communicate it to the human subject as well as to its own species. It can also be conveyed to horses, cattle, sheep, deer, cats, wolves, foxes, rabbits and guinea pigs. At the outset I may say that I am not a believer in its spontaneous origin, but believe that it arises directly from inoculation or contagion, as by a bite and the insertion of the virus in the wound made. I am also of opinion that it is not indigenous to this country, but is kept up by re-intro-

says it is cruel and cannot possibly be the means of stamping out rabies, as this dire disease is capable of spontaneous origin. The "pro-muzzler" on the contrary maintains that although muzzling in a proper manner may be temporarily inconvenient to the dog it is not cruel, and is the most likely means of stamping out rabies, and further that rabies can not and does not arise spontaneously. Let us for a moment calmly consider the question. That rabies is a contagious disease, and can be transmitted to man, and most animals by inoculation no one present, I opine, will attempt to deny. If in the large majority of instances, inoculation occurs through the bite of a rabid dog, it must necessarily be conceded that to prevent the dog from biting, will be the most likely factor in the diminution of the spread of the disease, and what, may well be asked, is so likely to accomplish this as efficient muzzling. The opponents of muzzling contend that compulsory registration and strict supervision are the best methods to adopt for the prevention of rabies. The irritation felt and expressed by those in favour of muzzling is caused by the partial nature of the order. The question presents itself to my mind in two aspects. 1. Is the desire one only to check or diminish the spread of rabies? If so then the scheduling of those areas in which the disease is most prevalent will for a time have this effect. 2. If the object be the extinction or stamping out of the disease, then the present muzzling order must prove ineffectual. To free the entire country from the disease, all dogs without exception—and probably other animals also—would have to be muzzled for a period extending certainly over twelve months, and quarantine of considerable length would have to be imposed on all imported dogs. In the present state of party politics, with the anti-muzzling agitation well sustained, a proposal of this nature is not likely to become law; but if rabies in animals and hydrophobia in man are to be exterminated in Great Britain and Ireland, I maintain it can only be accomplished by repressive measures, such as I have indicated. It is notorious that most continental states employ the muzzle in keeping down rabies, and their records show—particularly in the case of Sweden—that the stricter and more universal the repressive measures, the greater is the decline in the number of cases, and in the country named total extermination resulted.

Belief in the spontaneity of rabies in the face of modern scientific research simply passes my comprehension.

During the past year the nature of the virus of the zymotic disease "distemper in dogs" has been discovered and demonstrated by investigations and experiments carried on by Mr. Everett Millais, assisted by eminent scientific men. For many years the contagious and infectious nature of this disease has been acknowledged by those acquainted with the direful mortality its ravages have caused, but it has remained for Mr. Millais and his coadjutors to disclose the micro-organism to which it owes its existence. From the nasal discharge of puppies suffering from distemper, Mr. Millais was successful in separating three kinds of micro-organisms, viz., small bacilli, big bacilli and micro-cocci.

Subsequent cultivations and experiments demonstrated that the big bacillus is the *causa causans* of distemper. The identity of this micro-organism was proved by its having satisfied Koch's postulates. Mr. Millais has succeeded in propagating the disease by inoculation with an attenuated virus, but, writing in November last, states that further experiments are needed before he could advise the public to undertake the risk of inoculating for a modified disease. He purposed further prosecution of the subject in the direction of inoculation with the chemical product of the micro-organism, the results of which investigation will be published in due time.

Should Mr. Millais and his colleagues be able to establish beyond doubt that "immunity can be given to the dog without giving it distemper, even in an attenuated form" they will be entitled to the everlasting gratitude of a dog loving nation. For the information of any desirous of perusing Mr. Millais' articles on "The microbe of distemper," I have pleasure in stating they will find them in the issues of the *Fanciers' Gazette*, bearing dates October 11th and 18th, November 22nd and December 20th, 1889.

Since our last annual gathering, the Royal Commission on horse-breeding, have decided that certain hereditary unsoundnesses should disqualify thorough-bred stallions from competing for the Queen's Premiums. This action on the part of the Royal Commission is undoubtedly a wise one, and must ultimately lead to the breeding of sounder animals in the districts travelled by the premium winners. Unfortunately for horse breeding in this country, our friends the foreigners too often secure our best brood mares, hence the necessity of placing at the disposal of breeders sound sires, as it is obvious the influence of one sire in a district is infinitely greater than that of one dam. The steps taken by the commission to secure the services of sound sires, at comparatiuely low fees, must command the warm approval of all thoughtful breeders of the half-bred horse.

In the absence of Government grants, our profession is to be congratulated on the liberality displayed by the Royal Agricultural Society, who, on an appeal by Professor Brown, have resolved that an annual grant of £500 be made to the Royal Veterinary College (London) for the purpose of establishing a chair of Comparative Pathology and Bacteriology, subject to conditions. This is the kind of help sorely needed, and it is to be hoped the example of our leading Agricultural Society may be emulated by other kindred bodies, as alas no assistance seems forthcoming from the national funds.

That we have in the past suffered in comparison with our continental *confreres* in matters of original pathological research we are obliged to admit, and this has been from lack of means and opportunities rather than from want of skill.

Gentlemen, our profession though numerically small and comparatively poor, in a pecuniary sense, is still young, and to day manifests signs of vigour indicative of a higher development and greater public usefulness.

The members and friends then sat down to a most enjoyable repast.

EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

The half-yearly meeting of the above association was held at the Bell Hotel, Norwich, on Friday March 14th, 1890. The President, E. J. Kitchin, Esq., in the chair.

The minutes of the previous meeting having been read and confirmed, the officers for the ensuing year were elected. President: E. J. Kitchin, Esq., Norwich. Vice-Presidents: Wm. Bower, E. Rudham, F. Low, Norwich; T. E. Auger, Wymondham. Secretary and Treasurer: R. G. Barcham, North Walsham.

Coming Election of Council.

The President proposed and Mr. James Thurston seconded; Prof. Pritchard, Mr. F. Wragg, Mr. T. E. Auger and others supporting the motion, "That Mr. G. A. Banham, of Cambridge, be nominated as the representative of the Eastern Counties Veterinary Medical Association at the forthcoming Election of Councilmen,

the Society pledging itself to do its utmost to ensure his return as a member of Council."

The Secretary was requested to write Mr. Banham asking his consent.

The President next called upon Prof. Pritchard to give his discourse on—

CAPPED HOCK AND CAPPED ELBOW.

Commencing with the anatomy of the parts affected in these diseases, he minutely described both the similarities and differences in their structure, and also the parts immediately contiguous thereto; and impressed on the members the great importance of remembering these facts in the treatment of the two affections.

Remarking that external violence was in ninety-nine cases out of a hundred the cause of both diseases—in the case of the elbow from inner heel of the shoe in lying down—the Professor detailed the various forms we should meet with in every-day practice, especially in the elbow; sometimes simply a sac full of fluid; another form a network of connective tissue with spaces filled with either fluid or pus, and occasionally the enlargement is a mass of organised lymph.

Treatment of Elbow.

In the simple form and in the first stages, the ordinary antiphlogistic measures are quite sufficient. In the two first forms, if further treatment is required slit the enlargement from top to bottom. Frequently the inflammation arising therefrom produces adhesion of the walls of the sac, if necessary an ointment of Biniodide Mercury 1 to 8 applied two or three days consecutively will very much assist in the healing process, and prevent the formation of tumour.

In the third form (Tumour) dissect it completely out. This can easily be done with horse in a standing position if twenty or thirty minims of Cocaine solution be subcutaneously injected.

Capped Hock.

Begin with antiphlogistic means. Compression is not practicable, the pressure is always unequal and will chafe somewhere. Bin-iod. of Mercury severely and continually applied is perhaps about the best treatment. Oleate of Mercury and Oleate of Iodine are both very useful agents.

As a preventive means in case of capped elbow he has found a bolster or pad tied above the knee very successful, it completely prevents heel of shoe coming in contact with the elbow.

After a most lengthy and animated discussion in which most of the members present took part, Mr. J. Hammond, of Bale, introduced the subject of the recent outbreak of pleuro-pneumonia at Holkham. In his preliminary observations he dwelt on the importance of the point at issue, both to the private practitioner and the local veterinary inspector. After reading and commenting on Mr. Cope's report, Mr. Hammond remarked, that in preparing his report, Mr. Cope appears to have wholly ignored these facts, and restricted his attention entirely to the mere coincidence that the cows, previous to their illness, had been in contact with a convalescent bullock. Having heard all the facts connected with the outbreak, it remained for them to decide whether they considered Mr. Cope was justified in assuming that this recovered bullock conveyed pleuro-pneumonia to the cows; thus giving publicity to a report so detrimental to Mr. Hammond's reputation. Official documents emanating from such authorities as Government Inspectors are always believed by the public to be extremely accurate, and altogether beyond dispute. How careful these gentlemen should be, therefore, to ascertain the true history of an outbreak before circulating their reports, and not speculate on theories unsupported by facts, and calculated to unjustly incriminate the private veterinary attendant or local inspector.

The following resolution was then proposed, and unanimously adopted:—"Mr. Cope's report on the recent outbreak of Pleuro-pneumonia at Holkham is inaccurate, misleading, and unjust to Mr. Hammond. We are also of opinion that the theory assumed and believed by Mr. Cope "that the 'recovered bullock' conveyed the disease to the cows" is not supported by the true history of the outbreak.

The meeting terminated with a most cordial vote of thanks to Prof. Pritchard for his address and to the President for so ably taking the chair.

R. S. Barcham, *Hon. Sec.*

REVIEW.

THE REGISTER OF VETERINARY SURGEONS.

The new Register, revised to February 1890, is now available, and may be obtained (price 2/-) from the Secretary, or from Messrs Bailliere Tindall and Cox. Although it cannot be correctly described as light literature, it is really remarkable how much of interest can be found in its pages. Our Act of Parliament and our four Charters occupy rather more than 40 pages. Then come the Bye-laws and Regulations for Meetings and Examinations, followed by lists of all our Presidents, Vice Presidents and Members of Council since 1844. Some pages are also devoted to "the Regulations for admission to and promotion in the Army Veterinary Department;" and the different schools have their professional lists shortly stated.

Then we come to the Register, which is very much more than a mere list of names. It cannot be too often impressed upon practitioners that this Register is now the only legal evidence of their professional status, and that absence from it may lead to serious inconvenience To obtain a correct register the Council must insist upon proper addresses bring appended to each name, and the Registrar is empowered to remove all names of persons he has "reason to believe" have ceased to practice. Failure to reply to the annual letter enclosing the Voting papers is *prima facie* evidence upon which he may act, and on carring out certain forms remove a name. It becomes advisable therefore that every practitioner should obtain a copy of the register and see that his name and address is correctly entered.

The Register now contains the names of 2747 effective members and 721 "Existing Practitioners." During the past year a number of names have been removed with the result that we now number 181 less than in 1888, and 248 less than in 1889.

Even this new register is capable of further revision, as shown by the fact that there are still 84 names without an available address. At page 197 we find "Thompson, James—Canada, 1813, Lond." Not only is the address vague but its date of diploma suggests that the graduate must now be very old—*if alive.*

The list of Fellows shews a total of 203 names. Of these 126 obtained the degree by examination, of whom 3 are dead, 77 by selection, of whom 30 are dead, so that only 170 members now hold the Fellowship—a proportion of one in sixteen.

It may not be uninteresting to note the distribution of the profession. There are—

In the Army	159
,, England	1732
,, Scotland	417
,, Ireland	210
,, Wales	64
,, America	82
,, Australasia	34
,, India	22
,, Africa	12
,, Other countries ...	15
	2747

There are living 12 members who have been President, 41 who have been Vice-President, 46 who have been Members of Council, and 23 who have acted as Examiners.

EXTRACTS AND NOTES.

HAZELINE.

Hazeline is a powerful astringent, stimulant, and hæmostatic preparation. It is the product obtained by distilling the young bark, leaves and small twigs of the Hamomelis Virginica, commonly known as Witch Hazel. This pharmaceutical preparation has been highly recommended for its softening and healing influence upon the skin, and it is extensively employed as a remedy in cutaneous affections. The healing properties of Witch Hazel Bark first attracted the attention of the North American Indians as a sedative, and discutient dressing for painful tumours or other cases of external inflammation. The crude method adopted by the Indians for separating the active principles was improved upon, and Hazeline is the result. This improved product is said to be a useful stimulating embrocation for use in veterinary practice. Externally applied, it quickly reduces the swelling attending a bruise or sprain, and when applied on lint or wadding to a bleeding wound, it will stop hœmorrhage. The success attending its medicinal employment by the Indians soon attracted the attention of the Whites, and now the distilled product of this useful drug bids fair to become as popular a remedy here as in the United States, both for human and veterinary use.

CIRCUS RINGS ALWAYS THE SAME SIZE.

Mons. Le Roux, in a volume entitled *Acrobats and Mountebanks*, says :–

A circus is a circular arena of *fourteen yards nine inches in diameter*, surrounded by benches. Measure the diameter of the Cirque d'Hiver, of the Cirque d'Etée, and of the Nouveau Cirque. Cross the sea to America, follow Barnum, and measure across his arena; continue your journey around the world by exploring Australia and Asia; lastly, return to Europe by the Caucasus, raise the canvas of one of the numerous travelling circuses which erect their tents at Astrakhan in the fair time—you will not discover the difference of a fraction of an inch from the rule of fourteen yards nine inches in diameter. Fourteen yards nine inches is the regulation size.

The unvarying dimensions of the arena respond to a double necessity: the exigency of the man and the exigency of the animal.

The performer is instinctively nomad, both through disposition and interest. It is, therefore, most important that, although he continually changes his locality, he should find the scene of his performance unvaried.

This rule is extremely convenient for men, but it is indispensable for animals. A performing horse must find, in whatever spot it appears before the public, a ring of fourteen yards nine inches, sanded to a depth of three inches and a quarter, surrounded by a palisade opening in two places only, and low enough to enable it to walk round it with the fore feet on the red cushion and the hind legs in the arena.

ANIMAL VACCINE.

In the *Revue Veterinaire* (February 1890) Professor Peuch discusses the origin of the so-called primitive or spontaneous vaccine. The question whether it came from the horse or the cow was the subject of dispute at the French Academy of Medicine nearly thirty years ago. It was then asked with some anxiety how the vaccine could be regenerated, for it had been remarked that vaccination from arm to arm had become less successful than at the beginning of the century. It was thought that by inoculating human lymph to the cow, or better still to the calf, it would recover its activity in passing from one calf to the other.

This opinion, which has served as the basis of animal vaccination, is correct, if one understands by lymph the virus taken from the horse attacked with horse-pox—that is to say, the natural *vaccine;* but, in the view of Professor Peuch, it is erroneous when applied to the virus taken from a child and transmitted to a calf. He has observed that in twenty-two experiments made on 5 cows and 17 calves the human lymph, in passing from one animal of the bovine species to another, experiences such an attenuation that it will take no longer than at the third or fourth generation.

In another series of researches carried out on 6 cows and 22 calves, of which 1 cow and 1 calf were inoculated with horse-pox, and 5 cows and 21 calves with cow-pox derived from horse-pox, he has cultivated the vaccine up to the eleventh generation, and he has then produced pustules as excellent as at the first generation. These experiments were made

at the Lyons Veterinary College in 1870-71, and they have been continued by him at Toulouse on a great scale. Thus from 1880-1889 there have there been vaccinated 320 calves, viz., 8 directly with horse-pox, 160 with cow-pox derived from horse-pox, 140 with cow-pox cultivated at Bordeaux by M. L. Baillet, and 12 with vaccine derived from a glycerine pulp prepared in the establishment of M. Chambon and Dr. Menard of Paris.

Professor Peuch has always observed that the cow-pox derived from horse-pox may be inoculated with the greatest facility without losing any of its activity in passing from one calf to the other, and that up to the fortieth generation.

These facts demonstrate that in the practice of animal vaccination it is not immaterial whether one employs cow-pox derived from horse-pox or cow-pox derived from human vaccine. Professor Peuch believes that it is firmly established that the vaccinal eruption which arises in the horse by spontaneous contagion constitutes a very valuable source for the regular culture of animal vaccine. But the question may be put—Is this the only source, and does there not exist in the cow a vaccine as active as that of the horse?

It is well known that there are sometimes recorded cases of so-called spontaneous cow-pox, which appear to be developed without direct contagion through human vaccine or horse-pox, but Professor Peuch doubts whether these cases ought to be considered as absolutely proving the existence of a vaccine of the cow proceeding from spontaneous contagion, as horse-pox manifestly does. His reasons for rejecting this view are as follows:—

It is invariably the case that in instances of so-called spontaneous cow-pox the vaccinal eruption is not seen except in milch-cows, and in them exclusively on the mammary gland. Veritable vaccinal pustules have never been seen on any other part of the body than the udder, and the eruption has never been observed in a heifer, bull, or ox. The eruption is always on the teats—that is to say, on a part which the person milking the cows handles every day, morning and night, and sometimes at mid-day during the whole duration of lactation.

On the other hand, it is to-day well established that the horse-pox, or variola of the horse, is a disease that is not rare. Sometimes the eruption which characterises it is very discrete and can easily be overlooked, for it does not produce any disturbance of health, and the hairs render its discovery very difficult for any one not advised of its existence. Sometimes it is confluent and manifests itself around the lips and nostrils and on the pituitary membrane, so as to simulate acute glanders. When occurring on the buccal mucous membrane it has been mistaken for aphthous stomatitis, when on the genital organs for *maladie du coit;* when in the hollow of the pastern it has been considered as an acute form of "grease." It is then accompanied by fever and loss of appetite, sometimes by engorgements, stiffness, and lameness, and it cannot pass unperceived. This eruption is observed on horses and asses without distinction of sex; it is seen on entire horses, geldings, and mares. If one compares this eruption, which results from the natural contagion, with that which is observed solely on milch cows, and exclusively on the udder, more especially on the teats, one is constrained to believe that the so-called spontaneous cow-pox results from a direct inoculation, notably by the hands of the milker, who may take the germ in grooming a horse or an ass attacked with horse-pox under one or other of the various forms which it manifests. Hence Professor Peuch holds with Chauveau that it is in the organism of the equidæ that the natural pox develops, and that it is necessary to have recourse to this if it is desired to find at the height of its activity a virus happily transformed into a prophylactic agent.—*Journal of Comparative Pathology and Therapeutics.*

American Trotters.

So many American trotters have covered a mile in less than what used to be regarded a few years ago as the remarkable time of 2min. 30sec. that it is now apparently not thought worth while to take note of a trotter's performance if it exceeds 2min. 20sec. Just over 300 horses have made the latter record—that is to say, have either exactly done so or have come within it, the figures extending upwards to the 2min. 8¾sec, which remains the unapproached achievment of the famous Maud S. This was made at Cleveland in July, 1885, and stands by itself. When the mare made this unprecedented time she had to beat her own figures, next to her standing the absurdly-named Jay Eye See, who, in 1884, had trotted a mile in 2min. 10sec.; and last year a third and fourth on the list of great trotters made their mark, a bay mare called Sunol having done the distance in 2min. 10½sec, in San Francisco last November, while a horse called Guy had taken a quarter of a second more in the previous August. St. Julien, in 1880, held supremacy with a record of 2min. 11¼sec, and the last of the first half dozen on the list is Axtell, who made 2min. 12sec. in October. After these the figures lengthen. Five trotters hold records of 2min. 15secs., and 18 have 2min. 18sec. to their credit; while for some reason or other 2min. 19¼sec. is a division of time hit off oftener than any other, no fewer than 37 horses having done this. Between 2.20 and 2.30 the list has become too extended for publication.

Medico Veterinario.

The following appears in the columns of a contemporary newspaper:—

VETERINARY NOTICE.

T. J. MITCHELL, M.R.C.V.S.L.,

First Honoursman Royal College of Veterinary Surgeons.
Fellow of Veterinary Medical Association.
Medico Veterinario of Spanish Veterinary College.
Twelve Years' experience in Racing and Hunting Stables.

VETERINARY ESTABLISHMENT,
NEW STREET, KILKENNY.

Horse Shoeing Competitions.

There is another point on which the Highland Society should follow the example of the 'Royal' and other leading Societies in England, and that is in having competitions in horse-shoeing at its annual shows. Veterinary surgeons know well that a full half of the cases of lameness in town horses is directly due to bad shoeing, and almost the same may be said of country horses. Such competitions would be calculated to do an immense amount of good and it may not be too late even yet to urge the directors of the Highland Society to institute such competitions at the forthcoming show at Dundee.—*North British Agriculturist.*

The Rabbit Pest in New South Wales.

The cost of destroying rabbits in New South Wales is enormous, the Government having expended nearly £1,000,000, and the pastoral lessees about £250,000. A new Rabbit Act, making destruction of the pest compulsory, is proposed. Pastoral holdings are to be fenced with rabbit-proof wire fencing. Lessees are to be aided by Government in enclosing their holdings. The Minister of Lands estimates that it would cost £3,000,000 to enclose the leasehold areas in the western and central divisions of the colony with rabbit-proof fencing.

Rats Carrying off Eggs.

A correspondent of the *Field* writes:—Having frequently seen different theories as to how rats carry eggs, I thought the following incident might interest your readers. My gardener and another servant were standing on a bridge which crosses the moat surrounding my house, when they observed a rat come out of a duck's nest not more than ten yards from them carrying an egg; he held it between his lower jaw, or chin, and chest. Carrying it in this position, he walked down a plank which is used by the ducks to go up to their nests, and swam across the moat, which is about 30 feet wide; he landed on the other side up rather a steep bank, and made off into the bushes with his egg.

CORRESPONDENCE.

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to our friends who may send us cuttings from local papers, containing facts of interest.

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.

Communications for the Editor to be addressed 20 Fulham Road, S.W.

"CHARITY BEGINS AT HOME."

DEAR SIR,

While perusing the reports and letters in connection with the recent horse case I was surprised to find some veterinary surgeons still showing their dissatisfaction at the verdict. Ought not the matter to have dropped after the meeting in Leeds? Was it not the general opinion that the horse was unsound? Before appealing to the profession to defray the costs of the case I think it should be known that the defendant is in a position to defray his own expenses, and that he is only a registered practitioner. Do I understand Mr. Greaves rightly that registered practitioners are admitted as members of the Veterinary Mutual Defence Society, and that if the defendant had been a Member of that Society he would have escaped being prosecuted? I think if a V.S., qualified or unqualified, examines a horse, and gross negligence can be proved against him, that he ought to pay damages. The lamentable ignorance of some of the leading lights of the profession as to the manners and customs of some veterinary surgeons, and the people they have to deal with in different parts of the country is astounding, and is only too plainly shown by their action in the present horse case, and their supporting the Farriers' Company to revive the word "Farrier" which, although nearly obsolete, is used in most parts of the country to mean either a V.S., or a man having some veterinary knowledge.

Yours truly, "HONESTAS OPTIMA POLITIA."

PHLEGMONOUS EYRSIPELAS.

DEAR SIR,

Would you, or any of your readers, assist me (through the medium of your journal) so that all who read may learn and so be benefited as well as myself. I have under treatment a very bad case of "Phlegmonous Erysipelas," the result of an abscess. On the 12th March last, I was called to see a two-year-old colt that was lame, I found the near hock very much enlarged, hot, and painful; I ordered hot poultices to be constantly applied all day and administered a dose of physic. The next day I opened a large abscess on the outer and lower part of the hock, and evacuated about a pint of pus. After lancing the abscess there was very considerable hœmorrhage for which I could not account, I made a dependent orifice in the pouch formed by the abscess and put on another large poultice. The next day I thoroughly cleansed all the parts which looked healthy, and in a day or two I discontinued my visits. On the 27th of the same month I was again summoned to attend the colt (you will notice the length of time that elapsed since my last visit on the 16th) I found the whole of the skin on the outer part of the hock had sloughed away and had left a large raw wound which was suppurating freely, the leg from the hock down to the fetlock was enlarged to twice its natural size, very hard, exceedingly painful, burning hot, and at several points pus was oozing out, I freely opened all the points that appeared to contain pus and ordered the leg to be well fomented with as hot water as the colt could bear, I gave another dose of physic and after that I gave twice daily an iron and vegetable tonic; locally I at first applied a solution of Belladonna but latterly I have been applying an emulsion of Olive oil, Pot. Carb., and water. I have had the colt fed on the very best of food, and am still continuing the same tonic. I have very freely and deeply incised all points that look like containing any pus so that, if possible, to prevent it burrowing, but my treatment does not seem to have any beneficial effect, some days it looks well and seems on the way to recovery and perhaps the next day it will appear as bad, if not worse, than it has ever been. Hoping you will excuse me for troubling you, and that you may be able to advise me as to treatment. Yours faithfully,

COLIN CAMPBELL, M.R.C.V.S., Mundford, Norfolk.

[In a similar case we found early evacuation of all abscesses and dry treatment with powdered boracic acid answer well.—ED.]

ERRATUM.

DEAR SIR,

In the short account of two monstrosities that had come under my notice, which appeared in *The Record* of March 19th, the transposing of the word "blending" in the paragraph commencing "The monstrosity was a female" renders it unintelligible. It should read as follows, "the common integument apparently blending with the peritoneum midway on the ribs." Yours truly, T. H. MERRICK.

Communications are acknowledged from Messrs. Wm. Willis, G. T. Pickering, and Dr. Ward.